REMARKS

This Request for Reconsideration is filed in response to the Final Office Action mailed on 19 March 2008 for the subject patent application.

In the present request, no claims have been amended, added, or canceled. The Applicants respectfully request reconsideration of all pending claims of the present application based on the reasons presented below.

In the Office Action mailed on 19 March 2008 for the present application, the Examiner rejected claims of the application under 35 U.S.C. § 103 based on Feder et al. (U.S. Patent Application Publication 2004/0142693), Einola et al. (International Publication WO 01/22764 A1), Soderbacka et al. (U.S. Patent Application Publication No. 2003/0114158), Kingdon et al. (U.S. Patent No. 6,047,183), and Pecan et al. (U.S. Patent Application Publication 2004/0097233). In response, the Applicants respectfully disagree with the claim rejections and submit that the claims are allowable over the prior art of record for at least the following reasons.

In order for claims to be properly rejected under 35 U.S.C. § 103(a), the prior art in combination must teach or suggest each and every limitation of the claims. There must also be a proper obviousness/non-obviousness assessment that includes some adequate reasoning and/or demonstration that one ordinarily skilled in the art would have combined the teachings of the references to produce that which is claimed.

I. REGARDING CLAIMS 1-6, 11-17, 23-29, AND 36-37.

A. The Prior Art Relied Upon Do Not Teach Or Suggest Measuring, From The Scanning [Via The Cellular RF Transceiver], A First Energy-To-Interference Ratio E_C/I_O Of The First Cellular Base Station Transceiver System And Measuring, From The Scanning [Via The Cellular RF Transceiver], A Second Energy-To-Interference Ratio E_C/I_O Of The Second Cellular Base Station Transceiver System As The Examiner Argues.

Claims of the present application recite the actions of "measuring, from the scanning, a first energy-to-interference ratio E_C/I_O of the first cellular base station transceiver system" as well as "measuring, from the scanning, a second energy-to-interference ratio E_C/I_O of the second cellular base station transceiver system" (see e.g. method claim 1).

In the Final Office Action, the Examiner argues that

> Feder as modified by Einola discloses all limitations including measuring a first and [sic] energy to interface ratio of the first and second transceiver system (see [0031; 0045]; fig. 1).

In response, the Applicants respectfully disagree with the Examiner's characterization and assessment of the relied upon art.

As indicated above, the Examiner refers to paragraphs 31 and 45 of Feder et al. for the teachings of the limitations. However, Feder et al. do not teach a single cellular transceiver which measures, from scanning, a first energy-to-interference ratio E_C/I_O of a first cellular base station transceiver system as well as a second energy-to-interference ratio energy-to-interference ratio E_C/I_O of a second cellular base station transceiver system. Instead, the Feder et al. reference is directed specifically to selection between *heterogeneous* wireless networks for data communications – specifically, between Third Generation (3G), 802.11 Wireless Local Area Network (WLAN), and Wireless Personal

Area Network (PAN) systems. As stated in the Feder et al. reference in paragraph 19: "[t]he systems detected by the mobile station may include systems of a type, which is different than, and disparate (i.e., not compatible) with respect to, the system current serving the mobile station."

These different types of networks have different radio interfaces and require different types of signal processing for various received signals. For example, the measurement for an 802.11-based WLAN is signal to noise ratio (SNR). See paragraph [0045] of the Feder et al. reference, where is stated that:

> For example, an appropriate measure of the interference level of the forward link (downlink) in an 802.11-based system is signal to noise ratio (SNR). However, to measure downlink interference in a 3G network, the mobile station must measure a signal energy to interference ratio (E_C/I_O) of a received pilot signal. In order to perform a comparison, the SNR and E_C/I_O can be converted to a common parameter by the SSA. (Emphasis Added)

Continuing with paragraph [0046], it is stated that

> In one embodiment, the different types of measurements may be compared by mapping each into a maximum available data bit rate. Accordingly, in the above example where the available systems include 802.11 network and a 3G network, the SSA may calculate the maximum data bit rate allowed for the 802.11 network based on the measured SNR, and the maximum data rate for the 3G network based on the measured E_C/I_O

As apparent, the mobile of Feder et al. does not measure any E_C/I_O with respect to an 802.11-based system, but rather a SNR or other "common" parameter (e.g. data bit rate).

Therefore, Feder et al. do not teach measuring, from the scanning, a first energy-to-interference ratio E_C/I_O of a first cellular base station transceiver system as well as a second energy-to-interference ratio energy-to-interference ratio E_C/I_O of a second cellular base station transceiver system.

Based on these reasons alone, claims 1-6, 11-17, 23-29, and 36-37 are allowable over the prior art of record.

B. The Prior Art Relied Upon Do Not Teach Or Suggest The Testing Step Of "If, As Identified At The Mobile Telephone, The First Energy-To-Interference Ratio E_C/I_O Is Greater Than A Minimum Threshold, Even If The First Energy-To-Interference Ratio E_C/I_O Is Less Than The Second Energy-To-Interference Ratio E_C/I_O.

Claims of the present application recite the test of "if, as identified at the mobile telephone, the first energy-to-interference ratio E_C/I_O is greater than a minimum threshold, even if the first energy-to-interference ratio $_C/I_O$ is less than the second energy-to-interference ratio E_C/I_O: causing the first cellular base station transceiver system to be selected for communication over the second cellular base station transceiver system..." (see e.g. method claim 1).

In the Final Office Action, the Examiner argues the following:

> Feder et al. disclose a method ... comprising:
>
> ...
>
> Selecting a 3G system (read as first base transceiver station) over WLAN system (read as second base transceiver station) since SLA from the service provider prefers a 3G system (read as second base transceiver station fails to provide the predetermined service; [0052]). A preference

level is set by the service provider, which prefers a 3G system (based on data rate, signal quality, etc.; see [0059 - 0068]) to any other system and is hereby construed as selecting a first base station since the second base station, i.e. WLAN system and station, fails to provide the 3G or greater service. In addition, Feder et al. further disclose a rule table (see [0073] and table 3) to store in the mobile client to select a system that is a 3G system (read as first system) when there is a choice between a $3G_{LOW}$ and an 802.11_{LOW} (read as second base station). For clarity, referring to paragraph [0062] if the E_C/I_O measurement is -9dB (read as better than a minimum threshold) for a 3G system (read as first base station) and -7dB for a 802.11 system (read as second base station) while being in the same range "LOW" a 3G system will be selected based on rule table 3 even though the signal quality is better for the 802.11 system (read as the first base station transceiver system has a signal quality that is greater than a minimum threshold, even if the signal quality is less than that of the second base station transceiver system).

In response, the Applicants respectfully disagree with the Examiner's characterization and assessment of the relied upon art.

As described earlier above, Feder et al. do not teach a single cellular transceiver which measures, from scanning, a first energy-to-interference ratio E_C/I_O of a first cellular base station transceiver system as well as a second energy-to-interference ratio energy-to-interference ratio E_C/I_O of a second cellular base station transceiver system. Instead, the Feder et al. reference is directed specifically to selection between *heterogeneous* wireless networks for data communications – specifically, between Third Generation (3G), 802.11 Wireless Local Area Network (WLAN), and Wireless Personal Area Network (PAN) systems. As stated in the Feder et al. reference in paragraph 19: "[t]he systems detected by the mobile station may include systems of a type, which is

different than, and disparate (i.e., not compatible) with respect to, the system current serving the mobile station."

These different types of networks have different radio interfaces and require different types of signal processing for various received signals. For example, the measurement for an 802.11-based WLAN is signal to noise ratio (SNR). See paragraph [0045] of the Feder et al. reference, where is stated that:

> For example, an appropriate measure of the interference level of the forward link (downlink) in an 802.11-based system is signal to noise ratio (SNR). However, to measure downlink interference in a 3G network, the mobile station must measure a signal energy to interference ratio (E_C/I_O) of a received pilot signal. In order to perform a comparison, the SNR and E_C/I_O can be converted to a common parameter by the SSA. (Emphasis Added)

Continuing with paragraph [0046], it is stated that

> In one embodiment, the different types of measurements may be compared by mapping each into a maximum available data bit rate. Accordingly, in the above example where the available systems include 802.11 network and a 3G network, the SSA may calculate the maximum data bit rate allowed for the 802.11 network based on the measured SNR, and the maximum data rate for the 3G network based on the measured E_C/I_O

As apparent, the mobile of Feder et al. does not perform any tests or comparisons based on two different E_C/I_O measurements from two different systems. Rather, Feder et al. proposes the use of a "common" parameter (e.g. *data bit rate*) to accommodate comparison between the disparate measurements from the disparate

packet data networks of interest. Since Feder et al. utilizes such common parameter for comparison, it creates rule tables based on service level or data bit rate classifications (see e.g. paragraphs [0059]-[0068] of Feder et al., and Rule Table 3 on page 3 of Feder et al.).

The Examiner alleges that Feder et al. teach the use of two E_C/I_O measurements from two different systems, but Examiner also bases his reasoning on the use of the rule tables of Feder et al. (e.g. Rule Table 3). *It is clear, however, that if measurements of the same type were taken in Feder et al, there would be no reason to utilize any service level or data bit rate classifications or rule tables.*

Therefore, the Examiner's articulated reasoning above in relation to the service level classification in paragraph [0062] and Rule Table 3 is unwarranted and incorrect. The prior art relied upon fails to teach the test of "if, as identified at the mobile telephone, the first energy-to-interference ratio E_C/I_O is greater than a minimum threshold, even if the first energy-to-interference ratio E_C/I_O is less than the second energy-to-interference ratio E_C/I_O: causing the first cellular base station transceiver system to be selected for communication over the second cellular base station transceiver system."

Based on these reasons alone, claims 1-6, 11-17, 23-29, and 36-37 are allowable over the prior art of record.

C. <u>There Is No Adequate Reason Why One Ordinarily Skilled In The Art Would Have Modified The Selection Technique Of Feder Et Al. To Include The Teachings Of The Other Relied Upon References</u>.

For proper rejections under 35 U.S.C. Sect. 103(a), there must also be a proper obviousness/non-obviousness assessment that includes some adequate reasoning and/or demonstration that one ordinarily skilled in the art would have combined the

teachings of the references to produce that which is claimed. When considering various prior art teachings for an obviousness/non-obviousness determination under §103,

> the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. *Graham vs. John Deere Co. of Kansas City*, 383 U.S. 1, pp 17-18 (1966).

In this analysis, a functional approach may be taken which asks whether the improvement of the presented invention is more than a predictable use of prior art elements according to their established functions. It is also helpful and instructive to consider whether there is any teaching, suggestion, or motivation to combine the teachings of the references, either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art, in a flexible and non-rigid manner. The reason or evidence of a motivation to combine teachings need not be found explicitly in the prior art references, as one may also "look to interrelated teachings of multiple patents; the effects of demands know to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art." *KSR Int'l Co. v. Teleflex Inc. et al.*, 127 S.Ct. 1727, at 1740-41.

Regarding claims 1-6, 11-17, and 23-29, there is no adequate reason why one ordinarily skilled in the art would have modified the selection technique of Feder et al. to include the teachings of the other relied upon references. The relied upon art in combination fails to teach, suggest, or render obvious the steps of "identifying, at the mobile station, that a first cellular base station transceiver system identified from the

scanning provides a Third Generation (3G) or greater communication service" and "identifying, at the mobile station, that a second cellular base station transceiver system identified from the scanning fails to provide the 3G or greater communication service but provides a communication service that is less than the 3G or greater communication service" such as "a Second Generation (2G) communication service," and then subsequently cause "the first cellular base station transceiver system to be selected for communication over the second cellular base station transceiver system based at least in part on identifying that the first cellular base station transceiver system provides the 3G or greater communication service and the second cellular base station transceiver system fails to provide the 3G or greater communication service" (see e.g. method claim 1).

One ordinarily skilled in the art would not have sought the data-communication centric teachings of Feder et al. to accommodate circuit-switched voice-capable mobile telephones. The focus of Feder et al. is the use of a *laptop computer* (see e.g. FIG. 1 of Feder et al.) which desires data services (not circuit-switched voice services) from a communication network. Also, the Feder et al. reference is directed specifically to selection between *heterogeneous* wireless networks which provide data communication – specifically, between Third Generation (3G), 802.11 Wireless Local Area Network (WLAN), and Wireless Personal Area Network (PAN) systems. As stated in the Feder et al. reference in paragraph 19: "[t]he systems detected by the mobile station may include systems of a type, which is different than, and disparate (i.e., not compatible) with respect to, the system current serving the mobile station." At the time of Feder et al., standards for selecting between *heterogeneous* wireless networks (e.g. for laptop computers) were not well-defined. This void left some opportunity for devising new selection techniques based on various preferences and desires of the user, some of which are described in the Feder et al. reference.

On the other hand, standards for cellular network selection of *cellular* networks for *mobile telephones* have already been well-defined and documented in cellular standards and specifications. This environment is the background and context of the present invention as defined in claims 1-6, 11-17, and 23-29. Conventional techniques for handing-off between cellular base station cells have been based on E_C/I_O. For example, see paragraph 45 on page 5 of the present application as published:

> ...the mobile station will consider conventional handoff techniques (step 338 through a connector A1). When conventional handoff techniques are considered at step 338, the mobile station facilitates a handoff to the candidate system if its signal quality is stronger than the signal quality of the current system. Conversely, if the signal quality of the candidate system is not better than that of the current system, then a handoff to the candidate system is not initiated and communication is maintained with the current system. In the present embodiment, the signal quality of the candidate system is better or greater than that of the current system if the candidate's system is at least 2 dB greater than that of the current system.

The techniques of the present invention, however, run contrary to traditional techniques for cellular network selection/handoff. Techniques of the present invention may be distinguished from conventional handoff techniques for cellular networks in that they "[identify], at the mobile station, that a first cellular base station transceiver system identified from the scanning provides a Third Generation (3G) or greater communication service" and "[identify], at the mobile station, that a second cellular base station transceiver system identified from the scanning fails to provide the 3G or greater communication service but provides a communication service that is" e.g. "a Second Generation (2G) communication service," and then subsequently cause "the first cellular base station transceiver system to be selected for communication over the second cellular base station transceiver system based at least in part on identifying that the first cellular base station transceiver system provides the 3G or greater

communication service and the second cellular base station transceiver system fails to provide the 3G or greater communication service." This may be done "even if the signal quality [of the first cellular base station transceiver system] is less than that of the second cellular base station transceiver system" as claimed.

One ordinarily skilled in the art would not have sought the data-communication centric teachings of Feder et al. to accommodate circuit-switched voice-capable mobile telephones. The Feder et al. reference does not even address a cellular network that provides a communication service that is less than a 3G communication service such as a Second Generation (2G) communication service. It is not clear from the reference how the laptop computer would operate in the 2G network for data communications, for switching between 2G and 3G networks during such data communications. The *"silence"* in the Feder et al. reference regarding the application of 2G networks, and/or any similar selection or handoff techniques utilized between 2G and 3G networks, is more indicative of the failure of Feder et al. and one ordinarily skilled in the art to appreciate the present techniques as claimed. Clearly, there is no adequate suggestion or motivation for modifying the teachings of Feder et al.

All pending claims 1-6, 11-17, 23-29, and 36-37 are directed to *"a mobile telephone configured for data communications and operative in accordance with a circuit-switched voice service and a packet data service."* Again in contrast, the teachings in Feder et al. reference focus on a *laptop computer* which desires data services (not voice services) from a communication network for communications. As described, the laptop computer in Feder et al. desires and seeks out data-service-capable networks such as 802.11 (WLAN) networks, wireline-based (Internet) networks, or 3G networks, for its computer software applications. Put another way, the teachings and/or focus in Feder et al. reference does not extend from any traditional use of cellular voice networks (e.g. 2G voice-only networks) for network selection (see previous argument presented above).

Additional limitations exist to even further distinguish the techniques of the present application applicable to 2G/3G cellular systems from the Feder et al. reference and other prior art of record. The mobile telephone configured for data communications of the present invention utilizes a single *cellular RF transceiver* for scanning while "measuring, from the scanning, a first energy-to-interference ratio E_C/I_O of the first cellular base station transceiver system" and also "measuring, from the scanning, a second energy-to-interference ratio E_C/I_O of the second cellular base station transceiver system." The first cellular base station transceiver system may still be selected for communications over the second cellular base station transceiver system "even if the first energy-to-interference ratio E_C/I_O is less than the second energy-to-interference ratio E_C/I_O," which runs counter to traditional cellular selection/handoff techniques.

Advantageously, a voice and data-capable mobile telephone of the present invention will maintain operation for communications with a 3G network over 2G networks, even when the 3G network has a lower signal quality over the available 2G networks.

Based on all of the above, there would be no adequate reason why one ordinarily skilled in the art would have modified the Feder et al. reference to obtain the claimed techniques. The Applicants respectfully request the Examiner to withdraw all rejections for claims 1-6, 11-17, 23-29, and 36-37.

II. REGARDING CLAIMS 7-10, 18-22, 30-35, and 38-39.

The prior art in combination fails to teach, suggest, and render obvious the other claims as well. With respect to claims 7-10, 18-22, 30-35, and 38-39, the prior art in combination fails to teach or suggest the steps of "identifying, at the mobile station, that at least a first cellular base station transceiver system identified from the scanning provides a Third Generation (3G) or greater communication service for the mobile

station" and "identifying, at the mobile station, that at least a second cellular base station transceiver system identified from the scanning fails to provide the 3G or greater communication service for the mobile station but provides a communication service that is less than the 3G or greater communication service" so that the mobile station can "[produce] and [send] a list of handoff candidate identifiers to a serving cellular base station transceiver system which includes a first identifier for the first cellular base station transceiver system but excludes a second identifier for the second cellular base station transceiver system based on identifying that the second cellular base station transceiver system fails to provide the 3G or greater communication service."

Reasons provided above regarding the allowability of claims 1-6, 11-17, 23-29, and 36-37 also apply to claims 7-10, 18-22, 30-35, and 38-39, where applicable.

A. The Prior Art Relied Upon Fail To Teach Or Suggest The Step Of Identifying, At The Mobile Station, That At Least A Second Cellular Base Station transceiver Identified From The Scanning Fails To Provide The 3G Or Greater Communication Service For The Mobile Station But Provides A Communication Service That Is Less Than The 3G Or Greater Communication Service.

Claims of the present application recite the actions of "identifying, at the mobile station, that at least a second cellular base station transceiver system identified from the scanning fails to provide the 3G or greater communication service for the mobile station but provides a communication service that is less than the 3G or greater communication service" (see e.g. method claim 7).

In attempt to identify these limitations, the Examiner states in the Final Office Action that

> Feder et al. disclose a method … comprising:
> …

> checking (read as identifying) each available system (read as base station transceiver system) detected in step S10 (see figure 2), to a list of allowable systems in the mobile client (read as mobile station; see [0020]) and determine if the systems are valid according to a Service Level Agreement or SLA from the primary service provider (read as identifying a base station that provides a predetermined service and by default identifying base station that fail to provide the predetermined service; [0020-0021]).

In response, the Applicants respectfully disagree with the Examiner's characterization and assessment of the relied upon art.

For one, the Examiner's articulation of the teachings of Feder et al. are difficult to follow and do not match or parallel that which is claimed. Secondly, there is no *cellular transceiver scanning technique* in Feder et al. for identifying a *cellular* transceiver system which fails to provide 3G but provides a communication service that is less than 3G. The Feder et al. reference is directed specifically to selection between *heterogeneous* wireless networks for data communications – specifically, between Third Generation (3G), 802.11 Wireless Local Area Network (WLAN), and Wireless Personal Area Network (PAN) systems. As stated in the Feder et al. reference in paragraph 19: "[t]he systems detected by the mobile station may include systems of a type, which is different than, and disparate (i.e., not compatible) with respect to, the system current serving the mobile station."

Based on these reasons alone, claims 7-10, 18-22, 30-35, and 38-39 are allowable over the prior art of record.

B. The Prior Art Relied Upon Fail To Teach Or Suggest The Steps Of Producing And Sending A List Of Handoff Candidate Identifiers To A Serving Cellular Base Station Transceiver System Which ... Excludes A Second Identifier For The Second

Cellular Base Station Transceiver System Based On Identifying That The Second Cellular Base Station Transceiver System Fails To Provide The 3G Or Greater Communication Service.

Claims of the present application recite the actions of "producing and sending a list of handoff candidate identifiers to a serving cellular base station transceiver system which includes a first identifier for the first cellular base station transceiver system but excludes a second identifier for the second cellular base station transceiver system based on identifying that the second cellular base station transceiver system fails to provide the 3G or greater communication service" (see e.g. method claim 7).

In the Office Action, the Examiner states that

> Kingdon et al. disclose MS (200) produces and sends a list of cell identities (read as handoff candidate identifiers) with strongest signal strengths (read as including certain base station identifiers and inherently excluding certain identifiers based on the selection criteria or services provided) to BSC (240) (read as serving base station transceiver) (see col. 4, line 66 - col. 5, line 9). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Feder et al. with the teachings of Kingdon et al. in order to assist the base station in the handover process and reduce the burden of processing at the mobile station.

In response, the Applicants respectfully disagree with the Examiner's characterization and assessment of the relied upon art.

The Applicants submit that Kingdon et al. do not teach or suggest the steps of producing and sending of a list of cell identities which excludes certain identifiers based on the selection criteria or services provided. In addition, the Applicants do not agree that a step of producing and sending a list of cell identities having the strongest signal

strengths is the same as excluding identifiers based on any identifying that the system fails to provide a 3G or greater communication service.

Instead, as apparent, the teachings of Kingdon et al. describe a decision to include cell identities in the message based solely on the strongest signal strength. The teachings of Kingdon et al. do not describe any exclusion of cell identifies due to any consideration or identification of what communication services are offered/not offered by the system. As claimed, the second cellular base station transceiver system, which is excluded from the list, does indeed provide a communication service for the mobile station, but that communication service is less than the 3G or greater communication service.

Finally, note that the Examiner indicates that Kingdon et al. *inherently* excludes certain identifiers based on the selection criteria or services provided. Even if this were true (which the Applicants assert that it is not), the Examiner has failed to articulate any reasoning in support of such inherency. The inherent property must necessarily be present, and the Examiner must provide reasoning behind the same in order to establish a prima facie case.

Based on these reasons alone, the rejections to claims 7-10, 18-22, 30-35, and 38-39 should be withdrawn and allowed over the prior art of record.

Based on all of the above, the Applicants respectfully submit that all pending claims are allowable over the prior art of record, and the application is now in a condition suitable for allowance.

The Applicants respectfully reconsideration of the claims in light of the above reasons, and allowance of the application at the earliest opportunity.

Thank you. The Examiner is invited to contact the undersigned if necessary to expedite prosecution of the present application.

Respectfully Submitted,

/John J. Oskorep/

Date: 16 June 2008

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